CONTENTS

EULEP International Symposium: Role of the Alveolar Macrophage in the Clearance of Inhaled Particles

A. Morgan. Introduction: EULEP International Symposium: Role of the Alveolar Macrophage in the Clearance of Inhaled Particles 3

Particle Phagocytosis

J. D. Brain. Mechanisms, measurement, and significance of lung macrophage function 5

B. Rehn, J. Bruch, T. Zou, and G. Hobusch. Recovery of rat alveolar macrophages by bronchoalveolar lavage under normal and activated conditions 11

Particle Transport by Lung Macrophages

B. E. Lehnert. Pulmonary and thoracic macrophage subpopulations and clearance of particles from the lung 17

G. Patrick and C. Stirling. Transport of particles of colloidal gold within and from rat lung after local deposition by alveolar microinjection 47

S. Hildemann, C. Hammer, and F. Krombach. Heterogeneity of alveolar macrophages in experimental silicosis 53

Macrophage Kinetics

P. Fritsch and R. Masse. Overview of pulmonary alveolar macrophage renewal in normal rats and during different pathological processes 59

J. P. Kellington, K. Gibson, T. M. Buckle, R. J. Talbot, and S. B. Hornby. Alveolar macrophage kinetics after inhalation of $^{239}PuO_2$ by CBA/Ca mice: changes in synthesis of DNA 69

H. S. Koren, M. Joyce, R. B. Devlin, S. Becker, K. Driscoll, and M. C. Madden. Modulation of eicosanoid production by human alveolar macrophages exposed to silica *in vitro* 77

Immune Response to Inhaled Particles

K. Miller, B. N. Hudspith, and C. Meredith. Secretory and accessory cell functions of the alveolar macrophage 85

G. M. Brown, D. M. Brown, and K. Donaldson. Persistent inflammation and impaired chemotaxis of alveolar macrophages on cessation of dust exposure 91

M. Friedman, M. C. Madden, J. M. Samet, and H. S. Koren. Effects of ozone exposure on lipid metabolism in human alveolar macrophages 95

H. Terzidis-Trabelsi, J. P. Lefèvre, J. Bignon, and C. R. Lambré. Decreased sialidase activity in alveolar macrophages of guinea pigs exposed to coal mine dust 103

C. G. Collier, M. J. Pearce, A. Hodgson, and A. Ball. Factors affecting the *in vitro* dissolution of cobalt oxide 109

P. Heilmann, W. Beisker, U. Miaskowski, P. Camner, and W. G. Kreyling. Intraphagolysosomal pH in canine and rat alveolar macrophages: flow cytometric measurements 115

Intracellular Particle Dissolution

W. G. Kreyling. Intracellular particle dissolution in alveolar macrophages 121

J.-L. Poncy, H. Metivier, M. Dhilly, M. Verry, and R. Masse. *In vitro* dissolution of uranium oxide by baboon alveolar macrophages 127

S. Y. Helfinstine, R. A. Guilmette, and G. A. Schlapper. *In vitro* dissolution of curium oxide using a phagolysosomal simulant solvent system 131

E. Ansoborlo, J. Chalabreysse, M.-H. Hengé-Napoli, and E. Pujol. *In vitro* chemical and cellular tests applied to uranium trioxide with different hydration states 139

P. Galle, J. P. Berry, and C. Galle. Role of alveolar macrophages in precipitation of mineral elements inhaled as soluble aerosols 145

K. Nyberg, U. Johansson, A. Johansson, and P. Camner. Phagolysosomal pH in alveolar macrophages 149

M. Lundborg, R. Falk, A. Johansson, W. Kreyling, and P. Camner. Phagolysosomal pH and dissolution of cobalt oxide particles by alveolar macrophages 153

Y. Oghiso, Y. Yamada, and Y. Shibata. Effects of instilled fibrogenic particles on the clonal growth of murine pulmonary alveolar macrophages 159

Y. Kubota, H. Sato, and S. Takahashi. The effect of γ-irradiation on the adherent capacity and iron metabolism of alveolar macrophages in mice and rats 163

G. Yifen, H. Lianping, and W. Dechang. Effect on ^{60}Co γ-irradiation on the nonspecific cytotoxicity of alveolar macrophages *in vitro* 167

F. Steinberg, B. Rehn, R. Kraus, K. Quabeck, J. Bruch, D. W. Beelen, U. W. Schaefer, and C. Streffer. Activity testing of alveolar macrophages and changes in surfactant phospholipids after irradiation in broncho-alveolar lavage: experimental and clinical data 171

Radiation and Chemical Effects on Macrophage Function

A. Morgan and R. J. Talbot. Effects of inhaled Alpha-emitting actinides on mouse alveolar macrophages 177

P. Camner and A. Johansson. Reaction of alveolar macrophages to inhaled metal aerosols 185

B. Bellmann, H. Muhle, O. Creutzenberg, and R. Mermelstein. Irreversible pulmonary changes induced in rat lung by dust overload 189

G. Oberdörster, J. Ferin, R. Gelein, S. C. Soderholm, and J. Finkelstein. Role of the alveolar macrophage in lung injury: studies with ultrafine particles 193

K. J. Morris, C. L. Barker, A. L. Batchelor, and P. Khanna. Dosimetric implications of pulmonary macrophage clusters observed within lungs of rats that have inhaled enriched UO_2 particles 201

M. Ellender, A. Hodgson, K. L. Wood, and J. C. Moody. Effect of bronchopulmonary lavage on lung retention and clearance of particulate material in hamsters 209

A. Johansson, T. Curstedt, C. Jarstrand, and P. Camner. Alveolar macrophages and lung lesions after combined exposure to nickel, cobalt, and trivalent chromium 215

K. Donaldson, G. M. Brown, D. M. Brown, J. Slight, and X. Y. Li. Epithelial and extracellular matrix injury in quartz-inflamed lung: role of the alveolar macrophage 221

J. Schimmelpfeng, E. Drosselmeyer, V. Hofheinz, and A. Seidel. Influence of surfactant components and exposure geometry on the effects of quartz and asbestos on alveolar macrophages 225

I. Y. R. Adamson. Radiation enhances silica translocation to the pulmonary interstitium and increases fibrosis in mice 233

Contributed Articles

S. R. Kamat, M. H. Patel, P. V. Pradhan, S. P. Taskar, P. R. Vaidya, V. P. Kolhatkar, J. P. Gopalani, J. P. Chandarana, N. Dalal, and M. Naik. Sequential respiratory, psychologic, and immunologic studies in relation to methyl isocyanate exposure over two years with model development 241

M. Sasiadek. Nonrandom distribution of breakpoints in the karyotypes of workers occupationally exposed to benzene 255

A. H. Smith, C. Hopenhayn-Rich, M. N. Bates, H. M. Goeden, I. Hertz-Picciotto, H. M. Duggan, R. Wood, M. J. Kosnett, and M. T. Smith. Cancer risks from arsenic in drinking water 259

Meeting Report

E. W. Mushak and W. T. Piver. Agricultural chemical utilization and human health 269

Letter to the Editor

L. Uzych. Nuclear testing and public health 275

Erratum

A. M. Herzberg and S. W. Lagakos. Cage allocation designs for rodent carcinogenicity experiments 277

Instructions to Authors 281

Published Volumes of *EHP* 283